

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **See form PCT/ISA/210**

Applicant's or agent's file reference

P10-1602

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/EP2005/001338

International filing date (day/month/year)

10.02.2005

Priority date (day/month/year)

11.02.2004

International Patent Classification (IPC) or both national classification and IPC

C08L21/00, C08K5/00

Applicant

SOCIETE DE TECHNOLOGIE MICHELIN

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-53	YES
	Claims		NO
Inventive step (IS)	Claims	1-53	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-53	YES
	Claims		NO

2. Citations and explanations:

1. Reference is made to the following documents in the present notification:

D1: Null V.: "Safe process oils for tires with low environmental impact", Kautschuk und Gummi - Kunststoffstoffe- Asbest, Dr. Alfred Huthig Verlag GmbH, Heidelberg, DE. vol. 52, no. 12, 1999, pages 799-800, 802, XP002184259

D2: J. Bowman, M. Da Via, M.E. Pattnelli, P. Torloredo: "The influence of non-toxic extender oil on SBR performances", Kautschuk Gummi Kunststoffstoffe, vol. 57, no. 1, 1 February 2004 (2004-02-01), pages 31-36, XP001183198, Heidelberg

2. Novelty and inventive step - claims 1-53

2.1. Document D1, which is considered to represent the most relevant prior art, describes a plasticizer system characterized in that it comprises an MES or TDAE oil (D1: pages 799-804).

2.2 Independent claims 1, 25, 39, 43, 46, 49 and 53 of the present application differ from D1 by replacing

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some of these MES or TDAE oils with a polylimonene resin.

2.3. The subject matter of claims 1-53 (plasticizer system, rubber composition comprising said plasticizer system, a method for preparing said rubber composition, use of said composition for manufacturing an article, said finished or semi-finished article, and the use of said plasticizer system for plasticising a diene rubber composition) is therefore novel.

2.4. In general, in rubber compositions for tyres, replacing DAE aromatic oils with MES or TDAE oils results in a reduction in the abrasion and cut resistance of said compositions.
The problem that the present invention is intended to solve can be considered to be that of:
Providing an improved plasticizer system based on an MES or TDAE oil that avoids the above drawbacks.

2.5. The solution proposed in the present application is a plasticizer system characterized in that it comprises an MES or TDAE oil and, in addition, a polylimonene resin.

2.6. Neither D1 nor a combination of D1 and D2 suggests said solution to the problem. The subject matter of claims 1-53 of the present application therefore involves an inventive step.

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Box No. V

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3. The inventions according to claims 1 to 53 are
industrially applicable.